

3. (Currently Amended) The servo controller according to Claim 1, wherein said mechanical characteristic compensation unit comprises

a first-order delay filter for correcting the position instruction signal, said first-order delay filter having a time constant according to a damping constant, an antiresonance frequency, and inertia of a load of the target machine so that influence of attenuation characteristics of the target machine is reduced,

a position instruction computation unit for attenuating a component having the antiresonance frequency of the target machine and which is included in the position instruction signal corrected by said first-order delay filter, in consideration of the attenuation characteristics of the target machine, and computing the feed-forward signal associated with the position of the target machine,

a differentiator for differentiating the position instruction signal corrected by said first-order delay filter,

a speed instruction computation unit for attenuating a component having the antiresonance frequency of the target machine and which is included in the position instruction signal differentiated by said differentiator, in consideration of the attenuation characteristics of the target machine, and computing the feed-forward signal associated with the speed of the target machine,

a computation unit for differentiating a value computed by said differentiator ~~so~~ to produce a differentiated value, and for multiplying the differentiated value by total inertia of the target machine, and

a torque instruction computation unit for attenuating a component having a resonance frequency of the target machine, and which is included in a value computed by said computation unit, in consideration of the attenuation characteristics of the target machine, and computing the feed-forward signal associated with the torque of the target machine.

4. (Previously Presented) The servo controller according to Claim 1, wherein said FIR filter unit includes at least two moving average filters, each moving average filter having a time constant based on requested path accuracy.

5. (Previously Presented) The servo controller according to Claim 1, wherein said mechanical characteristic compensation unit comprises an  $n^{th}$ -order filter ( $n$  is an arbitrary natural number) for correcting the position instruction signal, said  $n^{th}$ -order